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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,854	09/30/2003	Lester J. Kozlowski	354096.01300	6861

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EXAMINER	
NGUYEN, LUONG TRUNG	
ART UNIT	**PAPER NUMBER**
2622	

DATE MAILED: 12/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/675,854	KOZLOWSKI, LESTER J.	
	Examiner	Art Unit	
	LUONG T. NGUYEN	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 4-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-2, 4-11 filed on 9/21/2006 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

2. Claims 4-7 are objected to because of the following informalities:

Since claim 3 is cancelled, claim 4 cannot be dependent on cancelled claim 3; for the purpose of examination, the Examiner considers claim 4 is dependent on claim 2. Therefore, in Claim 4 (line 1), "Claim 3" should be changed to --Claim 2--.

Claims 4-7 are objected as being dependent on claim 4.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 11 is rejected under 35 U.S.C. 102(e) as being anticipated by Kozlowski et al. (US 6,697,111).

Regarding claim 11, Kozlowski et al. ('111) discloses a CMOS image sensor of the type having a plurality of active pixel sensors arranged in rows and columns and connected to row and column buses (plurality of active pixel sensors 10 of a sensor array, figure 4, column 5, lines 30-50), the improvement comprising an access supply (access supply 40, figure 4, column 5, lines 30-50) connected to an access transistor (MOSFET 14, figure 4) via a row bus (row bus 22, figure 4), the access supply comprising a current source configured as a distributed feedback amplifier (feedback amplifier 52, figure 8, column 6, lines 47-55).

5. Claim 11 is rejected under 35 U.S.C. 102(e) as being anticipated by Kozlowski et al. (US 6,493,030).

Regarding claim 11, Kozlowski et al. ('030) discloses a CMOS image sensor of the type having a plurality of active pixel sensors arranged in rows and columns and connected to row and column buses (plurality of active pixel sensors 10 of a sensor array, figure 4, column 5, lines 34-57), the improvement comprising an access supply (source supply 40, figure 4, column 5, lines 34-57. Note that, since the claim does not specifically define "an access supply", the source supply in figure 4 is read as an access supply) connected to an access transistor (MOSFET 14, figure 4) via a row bus (bus 24, figure 4. Note that, since the claim does not specifically define "a row", the column bus 24 in figure 4 is read as a row), the access supply comprising a current source configured as a distributed feedback amplifier (feedback amplifier 44, figure 7, column 6, lines 35-44).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-2, 4-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kozlowski et al. (US 6,493,030) in view of Kozlowski et al. (US 6,697,111).

Regarding claim 1, Kozlowski et al. ('030) discloses a pixel circuit comprising:

a photodetector (photodetector 12, figure 4, column 5, lines 35-65) connected to a first node (the node connects cathode of photodetector 12 to the gate of MOSFET 14, figure 4);

a dual-driver MOSFET having a gate connected to the first node (dual-driver MOSFET 14, figure 4);

a reset MOSFET (reset MOSFET 16, figure 4, column 5, lines 35-65) having a first leg connected to the first node and a second leg connected to a second node (the node connects one leg of reset MOSFET 16 to one leg of dual-driver MOSFET 14, figure 4, column 5, lines 35-65);

an access MOSFET (MOSFET 20, figure 4, column 5, lines 35-65) having a first leg connected to a row bus and a second leg connected to the second node;

a row select MOSFET (row select MOSFET 18, figure 4, column 5, lines 35-65) having a first leg connected to the dual-driver MOSFET and a second leg connected to a column bus (column bus 24, figure 4);

an access supply connected to the row bus (access supply Vdd connected to row bus 22, figure 4, column 5, lines 35-65);

a source supply connected to the column bus (source power supply 30, figure 4, column 5, lines 35-65);

a reset supply connected to a gate of the reset MOSFET (tapered reset supply 50, figure 4, column 5, lines 35-65);

wherein the MOSFETs all have the same polarity (figure 4 shows that the MOSFETs 14, 16, 18, 20, all have the same polarity).

Kozlowski et al. ('030) fails to specifically disclose the access supply comprises a current source that is a distributed feedback amplifier when connected to the MOSFETs. However, Kozlowski et al. ('111) teaches an imaging array of active pixel sensors, in which each pixel 10 includes an access supply 40, which comprises a feedback amplifier 52 (figures, 4, 8, column 6, lines 47-55). Therefore, it would have been obvious to modify the device in Kozlowski et al. ('030) by the teaching of Kozlowski et al. ('111) in order to buffer voltage supplied to a row. Doing so, it facilitates active pixel readout.

Regarding claim 2, Kozlowski et al. ('030) discloses wherein the photodetector is a photodiode (photodiode 12, figure 4, column 5, lines 35-65.

Regarding claim 4, Kozlowski et al. ('111) discloses wherein the feedback amplifier (feedback amplifier 52, figure 8, column 6, lines 47-55) is a cascaded inverter.

Regarding claim 5, Kozlowski et al. ('030) discloses wherein the reset supply produces a tapered waveform (tapered reset supply 50, figures 4, 9, column 5, lines 35-57).

Regarding claim 6, Kozlowski et al. ('030) discloses operational amplifier (amplifier 44, figure 7), a bias transistor (transistor 48, figure 7) and a mode transistor (transistor 46, figure 7).

Regarding claim 7, Kozlowski et al. discloses wherein the MOSFETs are N-type MOSFETs (figure 4 shows that the MOSFETs 14, 16, 18, 20 N-type MOSFETs).

Regarding claim 8, Kozlowski et al. ('030) discloses an active pixel having a plurality of pixel sensors (sensor array, column 5, lines 35-40), each pixel sensor comprising:

a photodiode (photodetector 12, figure 4, column 5, lines 35-65) connected to a first node (the node connects cathode of photodetector 12 to the gate of MOSFET 14, figure 4);

a dual-driver MOSFET having a gate connected to the first node (dual-driver MOSFET 14, figure 4);

a reset MOSFET (reset MOSFET 16, figure 4, column 5, lines 35-65) having a first leg connected to the first node and a second leg connected to a second node (the node connects one leg of reset MOSFET 16 to one leg of dual-driver MOSFET 14, figure 4, column 5, lines 35-65);

an access MOSFET (MOSFET 20, figure 4, column 5, lines 35-65) having a first leg connected to a row bus and a second leg connected to the second node;

a row select MOSFET (row select MOSFET 18, figure 4, column 5, lines 35-65) having a first leg connected to the dual-driver MOSFET and a second leg connected to a column bus (column bus 24, figure 4);

an access supply connected to the row bus (access supply Vdd connected to the row bus 22, figure 4, column 5, lines 35-65).

a source supply connected to the column bus (source power supply 30, figure 4, column 5, lines 35-65);

a reset supply connected to a gate of the reset MOSFET (tapered reset supply 50, figure 4, column 5, lines 35-65), the reset supply producing a tapered reset waveform (column 5, lines 45-50, figures 4, 9);

wherein the MOSFETs all have the same polarity (figure 4 shows that the MOSFETs 14, 16, 18, 20, all have the same polarity).

Kozlowski et al. ('030) fails to specifically disclose the access supply comprising a distributed feedback amplifier when connected to the MOSFETs. However, Kozlowski et al. ('111) teaches an imaging array of active pixel sensors, in which each pixel 10 includes an access supply 40, which comprises a feedback amplifier 52 (figures, 4, 8, column 6, lines 47-55). Therefore, it would have been obvious to modify the device in Kozlowski et al. ('030) by the teaching of Kozlowski et al. ('111) in order to buffer voltage supplied to a row. Doing so, it facilitates active pixel readout.

Regarding claim 9, Kozlowski et al. (030) discloses an operational amplifier (amplifier 44, figure 7), a bias transistor (transistor 48, figure 7) and a mode transistor (transistor 46, figure 7).

Regarding claim 10, Kozlowski et al. ('030) discloses wherein the MOSFETS are N-type MOSFETs (figure 4 shows that the MOSFETs 14, 16, 18, 20 N-type MOSFETs).

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUONG T. NGUYEN whose telephone number is (571) 272-7315. The examiner can normally be reached on 7:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DAVID L. OMETZ can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LN LN
12/09/06

DAVID OMETZ
SUPERVISORY PATENT EXAMINER